

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
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EPAS ID: PAT4961037

|                                                                                                                                                                                                 |                                      |
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| <b>SUBMISSION TYPE:</b>                                                                                                                                                                         | NEW ASSIGNMENT                       |
| <b>NATURE OF CONVEYANCE:</b>                                                                                                                                                                    | ASSIGNMENT                           |
| <b>CONVEYING PARTY DATA</b>                                                                                                                                                                     |                                      |
| <b>Name</b>                                                                                                                                                                                     | <b>Execution Date</b>                |
| TAKAAKI IWAI                                                                                                                                                                                    | 05/11/2018                           |
| SHUJI MINAGAWA                                                                                                                                                                                  | 05/11/2018                           |
| HISAKAZU OTOI                                                                                                                                                                                   | 05/11/2018                           |
| <b>RECEIVING PARTY DATA</b>                                                                                                                                                                     |                                      |
| <b>Name:</b>                                                                                                                                                                                    | SANDISK TECHNOLOGIES LLC             |
| <b>Street Address:</b>                                                                                                                                                                          | TWO LEGACY TOWN CENTER               |
| <b>Internal Address:</b>                                                                                                                                                                        | 6900 NORTH DALLAS PARKWAY, SUITE 325 |
| <b>City:</b>                                                                                                                                                                                    | PLANO                                |
| <b>State/Country:</b>                                                                                                                                                                           | TEXAS                                |
| <b>Postal Code:</b>                                                                                                                                                                             | 75024                                |
| <b>PROPERTY NUMBERS Total: 1</b>                                                                                                                                                                |                                      |
| <b>Property Type</b>                                                                                                                                                                            | <b>Number</b>                        |
| <b>Application Number:</b>                                                                                                                                                                      | 15977212                             |
| <b>CORRESPONDENCE DATA</b>                                                                                                                                                                      |                                      |
| <b>Fax Number:</b>                                                                                                                                                                              | (703)391-2901                        |
| <i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i> |                                      |
| <b>Phone:</b>                                                                                                                                                                                   | 7033912900                           |
| <b>Email:</b>                                                                                                                                                                                   | PTONotices@Marburylaw.com            |
| <b>Correspondent Name:</b>                                                                                                                                                                      | THE MARBURY LAW GROUP PLLC           |
| <b>Address Line 1:</b>                                                                                                                                                                          | 11800 SUNRISE VALLEY DRIVE           |
| <b>Address Line 2:</b>                                                                                                                                                                          | SUITE 1500                           |
| <b>Address Line 4:</b>                                                                                                                                                                          | RESTON, VIRGINIA 20191               |
| <b>ATTORNEY DOCKET NUMBER:</b>                                                                                                                                                                  | 3590-754US                           |
| <b>NAME OF SUBMITTER:</b>                                                                                                                                                                       | SOPHEAREAK C. IN                     |
| <b>SIGNATURE:</b>                                                                                                                                                                               | /sopheareak c. in/                   |
| <b>DATE SIGNED:</b>                                                                                                                                                                             | 05/15/2018                           |
| <b>Total Attachments: 2</b>                                                                                                                                                                     |                                      |
| source=Assignment_3Inventors_3590-754US#page1.tif                                                                                                                                               |                                      |
| source=Assignment_3Inventors_3590-754US#page2.tif                                                                                                                                               |                                      |

**ASSIGNMENT AND AGREEMENT**

*WHEREAS*, Takaaki IWAI, Shuji MINAGAWA, and Hisakazu OTOI (hereinafter referred to singly and collectively as "ASSIGNOR") has invented a certain invention entitled **THREE-DIMENSIONAL MEMORY DEVICE EMPLOYING DISCRETE BACKSIDE OPENINGS AND METHODS OF MAKING THE SAME** for which U.S. Non-Provisional Application filed herewith.

*WHEREAS*, SANDISK TECHNOLOGIES LLC, having its principal place of business at 6900 NORTH DALLAS PARKWAY, SUITE 325, PLANO, TX 75024 (hereinafter referred to as "ASSIGNEE") is desirous of acquiring the entire interest therein;

*NOW THEREFORE*, in view of good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, ASSIGNOR has sold, assigned, and transferred, and by these presents hereby sells, assigns, and transfers, unto ASSIGNEE, its successors and assigns, the full and exclusive right, title, and interest in and to (a) the above-identified invention or inventions and all improvements and modifications thereof, (b) the above-identified application and all other applications for Letters Patent of the United States and countries foreign thereto for the above-identified invention or inventions and all improvements and modifications thereof, (c) all Letters Patent which may issue from said applications in the United States and countries foreign thereto, (d) all divisions, continuations, reissues, and extensions of said applications and Letters Patent, and (e) the right to claim for any of said applications the full benefits and priority rights under the International Convention and any other international agreement to which the United States adheres; such right, title, and interest to be held and enjoyed by ASSIGNEE, its successors and assigns, to the full end of the term or terms for which any and all such Letters Patent may be granted as fully and entirely as would have been held and enjoyed by ASSIGNOR had this Assignment not been made.

*ASSIGNOR HEREBY AUTHORIZES AND REQUESTS* the Commissioner of Patents and Trademarks to issue said Letters Patent to ASSIGNEE as assignee of the entire interest, for the sole use and benefit of ASSIGNEE, its successors and assigns.

*ASSIGNOR HEREBY AGREES* (a) to communicate to ASSIGNEE, its successors and assigns, or their representatives or agents, all facts and information known or available to ASSIGNOR respecting said invention or inventions, improvements, and modifications including evidence for interference, reexamination, reissue, opposition, revocation, extension, or infringement purposes or other legal, judicial, or administrative proceedings, whenever requested by ASSIGNEE; (b) to testify in person or by affidavit as required by ASSIGNEE, its successors and assigns, in any such proceeding in the United States or a country foreign thereto; (c) to execute and deliver, upon request by ASSIGNEE, all lawful papers including, but not limited to, original, divisional, continuation, and reissue applications, renewals, assignments, powers of attorney, oaths, affidavits, declarations, depositions; and (d) to provide all reasonable assistance to ASSIGNEE, its successors and assigns, in obtaining and enforcing proper title in and protection for said invention or inventions, improvements, and modifications under the intellectual property laws of the United States and countries foreign thereto.

*ASSIGNOR HEREBY REPRESENTS AND WARRANTS* that ASSIGNOR has the full and unencumbered right to sell, assign, and transfer the interests sold, assigned, and transferred herein, and that ASSIGNOR has not executed and will not execute any document or instrument in conflict herewith.

*ASSIGNOR HEREBY GRANTS* to the law firm of **The Marbury Law Group PLLC** the power and authority to insert in this Assignment any further identification which may be necessary or desirable to comply with the rules of the U.S. Patent and Trademark Office for recordation of this Assignment.

*ASSIGNOR UNDERSTANDS AND AGREES* that the attorneys and agents of the law firm of **The Marbury Law Group PLLC** do not personally represent ASSIGNOR or ASSIGNOR's legal interests, but instead represent the interests of ASSIGNEE; since said attorneys and agents cannot provide legal advice to ASSIGNOR with respect to this Assignment, ASSIGNOR acknowledges its right to seek its own independent legal counsel.

| NAMES AND SIGNATURES OF INVENTORS |                                     |                      |
|-----------------------------------|-------------------------------------|----------------------|
| Name: <b>Takaaki IWAI</b>         | Signature:<br><i>Takaaki Iwai</i>   | Date:<br>5/11/2018   |
| Name: <b>Shuji MINAGAWA</b>       | Signature:<br><i>Shuji Minagawa</i> | Date:<br>5/11/2018   |
| Name: <b>Hisakazu OTOI</b>        | Signature:<br><i>Hisakazu Otoi</i>  | Date:<br>2018-11-May |